

TABLE 2.—Average number of times 0.01 inch, or more, of rain has fallen during the 12 hours ending with the 8 a. m. and 8 p. m. observations, for the years 1905 to 1923, inclusive, at Honolulu, Hawaii

Month	8 a. m.	8 p. m.	Month	8 a. m.	8 p. m.
January.....	12	10	August.....	9	6
February.....	8	6	September.....	10	7
March.....	10	8	October.....	10	7
April.....	9	7	November.....	10	8
May.....	8	5	December.....	12	9
June.....	9	5	Mean.....	10	7
July.....	11	4			

TABLE 3.—Percentage of rain falling during the nighttime (12 hours ending at 8 a. m.), for the years 1905 to 1923, inclusive, at Honolulu, Hawaii

Month	Per cent	Month	Per cent
January.....	48	August.....	71
February.....	62	September.....	53
March.....	56	October.....	63
April.....	60	November.....	62
May.....	62	December.....	54
June.....	43	Mean.....	59
July.....	78		

The diurnal march of rainfall for Honolulu would normally be expected to follow the ocean type, the land masses being insufficient to induce any marked departure. It closely resembles that shown by Fassig¹ for San Juan,

¹ Cf. Fassig, O. L. Tropical rains—their duration, frequency, and intensity. *Proc. Second Pan Amer. Scien. Cong.*: 460-473.

551.578.4 (773) THE GLAZE STORM OF DECEMBER 17-18, 1924, IN ILLINOIS¹

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[Weather Bureau, Springfield, Ill., January, 1925]

A severe glaze storm occurred in west-central Illinois on December 17 and 18, the area of great destruction embracing a territory about 75 miles in width and 170 miles in length. During the entire period of the storm, warm and dry weather prevailed in the extreme southern portion of the State.

In the affected area trees were badly damaged, wires broken, and thousands of electric poles went down. Electric services were paralyzed, and it will require weeks to restore operation and months to permanently rebuild the lines. Some rural telephone systems were ruined. Fortunately, there was no wind; otherwise the destruction would have been much greater. The ground was covered with a crust of one or more inches of ice and sleet, and apprehension was felt for winter grains. The icy conditions, together with the cold weather that followed the storm, rendered difficult the work of restoration. There was no thawing until the 30th and none of consequence until January 3. The ice on the trees gradually decreased, but the ground conditions remained unchanged until the thaw.

The situation in Springfield was typical of the rest of the area. Sleet and freezing rain alternated, the total precipitation being 3.63 inches. Probably three-fourths of the trees in the city were injured to a greater or less extent, and in places the streets were a tangle of wires, poles, and brush. The ice on the upper side of objects ranged from 0.4 to 0.8 inch, and the weight of twigs was

P. R., except for the absence of a small maximum during the early afternoon. The cause of the night maximum of cloudiness and rainfall is generally believed by meteorologists to be the result of a more rapid radiation aloft than at the ocean surface, thereby causing a convectional overturning of the air at this time. This being the case it would normally be expected that the diurnal variation would be the greatest at the equator, decreasing with increasing latitude in so far as this affects the intensity of insolation. The variation should also be greater in summer than in winter.

The unusual high night maximum in Honolulu during the summer time is probably caused by the more abundant formation of low clouds during the night hours, being just sufficient to form a shower over the city. It is worth remarking in this connection that the diurnal march of rainfall is generally opposite in this case to that of wind velocity, despite the fact that some wind is necessary to the formation of the trade wind shower.

A rather peculiar feature of the annual curve is the brief but marked secondary maximum between the hours of 7 and 8 o'clock in the evening. This secondary maximum can be observed in every month but July, and is very pronounced in the months of March, April, September, November, and December. In the last two months this secondary maximum is greater than the early morning one, though also briefer. It certainly is not synchronous with any known maximum of rainfall or cloudiness over the ocean.

increased fifteen times. The depth of sleet and ice on the ground was 1.9 inches. It is probable that there was more ice in the storm of February, 1883, the weight of ice per foot of wire at that time being 11 ounces as compared with 8 ounces in the present storm. It must be remembered, however, that in 1883 there were very few wire services, so the money loss is far greater in the present storm.

The street railway company and the Illinois Traction System (electric) resumed complete operation 17 days after the storm. About one-half of the light and power customers had no electricity, and 3,000 telephones were out of commission. Electric light service was completely restored January 10. Springfield had no outside wire connection for several days. Without dispatching facilities and with frozen switches and frogs, the steam roads operated with great difficulty and trains were hours late. The ice had practically disappeared from the trees and wires by January 4, but at this writing, January 20, there is still considerable ice on the ground. The duration of ice on the trees is probably without precedent in this section.

The Western Union Telegraph Co. lost 8,000 poles and the Illinois Bell Telephone Co. about 23,000. The total damage to wire services in Illinois will probably equal or exceed \$5,000,000. If there is added to this the loss of business, the damage to shade and orchard trees, and the possible injury to winter grains, the storm may be classed as one of the most disastrous of its kind in the history of the State.

¹ Condensed from the December number of Climatological Data, Illinois Section.



Fig. 1.—Glaze storm, Springfield, Ill., December 17-18, 1924. (H. E. Neef, photographer)

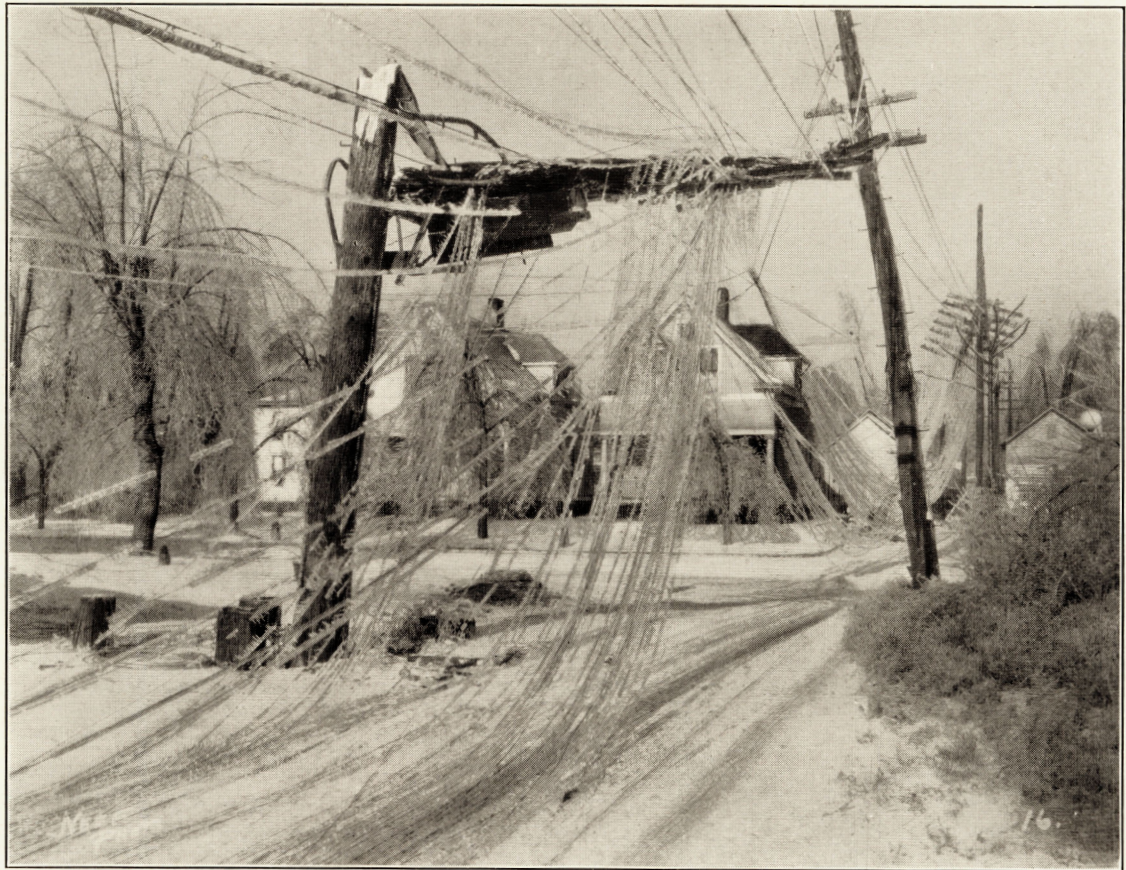


FIG. 2.—Glaze storm, Springfield, Ill., December 17-18, 1924. (H. E. Neef, photographer)



FIG. 3.—Glaze storm, Springfield, Ill., December 17-18, 1924. (H. E. Neef, photographer)